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# Post-transcriptional control of gene expression: Mechanisms of RNA decay

July 10 - 15, 2016
Lisbon, Portugal

Organizers:
**Jeff Coller**
Case Western Reserve University
Cleveland, Ohio

**Ciarán Condon**
CNRS, Institut de Biologie Physico-Chimique
Paris, France

Sunday, July 10, 2016

| **Time** | **Title/Topic Event** | **Speaker, affiliation** |
|---|---|---|
| 4:00 p.m. – 9:00 p.m. | Conference Registration | |
| 6:00 p.m. – 7:00 p.m. | Welcome Reception | |
| 7:00 p.m. – 8:00 p.m. | DINNER | |
| 8:00 p.m. – 9:45 p.m. | ***Welcome/Keynote Speakers*** | |
| 8:00 p.m - 8:15 p.m | FASEB Welcome/Announcements | Kristen Hagy/Jeff Coller |
| 8:15 p.m. - 9:00 p.m. | T1. Keynote 1: The EMBO Keynote Lecture: Global mapping of endogenous RNase E cleavage sites by TIER-seq reveals processing-dependent small RNA biogenesis | Jörg Vogel (University of Würzburg) |
| 9:00 p.m. - 9:45 p.m. | T2. Keynote 2: The Ins and Outs of the RNA exosome | Chris Lima (Sloan Kettering) |

Monday, July 11, 2016

| **Time** | **Title/Topic Event** | |
|---|---|---|
| 7:30 a.m. – 9:00 a.m. | BREAKFAST | |
| 7:30 a.m. – 12:00 p.m. | Conference Registration | |
| 9:00 a.m. – 12:00 p.m. | ***Session 1: 5' events in mRNA decay*** ***Chair Joel Belasco*** | |
| 9:00 a.m - 9:30 a.m | T3. All 5’ caps are not equal: Unique caps with corresponding decapping enzymes | Mike Kiledjian (Rutgers Univeristy) |
| 9:30 a.m - 10:00 a.m | T4. 5'-terminal control of bacterial mRNA degradation | Joel Belasco (NYU) |
| 10:00 a.m. – 10:15 a.m. | *Morning Coffee Break and* ***group photo*** | |
| 10:30 a.m. - 11:00 a.m. | T5. RNA degradomes reveal substrates and importance during stress responses of *Arabidopsis* XRN4 | Pamela Green (University of Delaware) |

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| 11:00 a.m. - 11:15 am | T6. Cap recognition and catalytic activation of the Dcp1/Dcp2 mRNA decapping complex | Jeffrey Mugridge (UC San Francisco) |
| 11:15 a.m. - 11:30 a.m. | T7. Structural insights into the mechanism of mRNA decapping activation | Eugene Valkov (Max Plank Institute for Developmental Biology) |
| 11:30 p.m. – 11:45 a.m. | T8. The microprotein NoBody interacts with enhancer of decapping protein 4 in the human mRNA decapping complex | Sarah Slavoff (Yale University) |
| 11:45 a.m. - 12:00 p.m. | T9. 5' mRNA cap surveillance in *Arabidopsis thaliana* | Aleksandra Kwasnik (University of Warsaw) |
| 12:00 p.m. – 1:00 p.m. | LUNCH and **Meet the Speakers** | |
| 1:00 p.m. – 2:30 p.m. | Reserved | |
| 2:30 p.m. - 3:00 p.m. | ***Why you must visit my poster*** | |
| 3:00 p.m. – 4:30 p.m. | ***Poster Session (odd numbers)*** | |
| 4:30 p.m – 6:00 p.m. | ***Poster Session (even numbers)*** | |
| 6:00 p.m. – 7:00 p.m. | Conference Registration | |
| 6:00 p.m. – 7:00 p.m. | DINNER | |
| 7:00 p.m. – 9:30 p.m. | ***Session 2: 3' events in mRNA decay*** ***Chair Ambro Van Hoof*** | |
| 7:00 p.m. – 7:30 p.m. | T10. Molecular mechanisms of the cytoplasmic exosome | Elena Conti (Max Plank Institute for Developmental Biology) |
| 7:30 p.m. – 7:45 p.m. | T11. Uridylation and PABP cooperate to repair mRNA deadenylated ends in Arabidopsis | Dominique Gagliardi (Université de Strasbourg) |
| 7:45 p.m. – 8:00 p.m. | T12. AU-Rich Element structure and its impact on RNA binding of ZFP36L2 | Sylvia Ramos (University of N. Carolina) |
| 8:00 p.m. – 8:30 p.m. | T13. Ribonucleases "reloaded": a new look at old data | Cecilia Arraiano (University of Lisbon) |
| 8:30 p.m. – 9:00 p.m. | T14. Regulatory roles of deadenylation factors in controlling mRNA turnover across the transcriptome | Ann-Bin Shyu (University of Texas) |
| 9:00 p.m. – 9:30 p.m. | T15. Roles of specific TUTases in histone mRNA degradation | Bill Marzluff (University of N. Carolina) |

Tuesday, July 12, 2016

| **Time** | **Title/Topic Event** | |
|---|---|---|
| 7:30 a.m. – 9:00 a.m. | BREAKFAST | |
| 7:30 a.m. – 12:00 p.m. | Conference Registration | |
| 9:00 a.m. – 12:00 p.m. | ***Session 3: Translation and Stability*** ***Chair Hani Zaher*** | |
| 9:00 a.m - 9:30 a.m | T16. Insight into the interconnection between mRNA translation and decay | Jeff Coller (Case Western Reserve University) |
| 9:30 a.m - 10:00 a.m | T17. Remarkable Functional Convergence: Type I and II Toxin-Antitoxins Induce Persistence by a "Magic Spot" Dependent Mechanism | Ken Gerdes (U. of Copenhagen) |
| 10:00 a.m. – 10:15 a.m. | *Morning Coffee Break* | |
| 10:15 a.m. - 10:45 a.m. | T18. mRNA stability is substantially dictated by the action of the ribosome | Rachel Green (Johns Hopkins University) |
| 10:45 a.m. - 11:15 a.m. | T19. Role of a new ribonuclease in selective mRNA turnover in *B. subtilis* | Ciarán Condon (IBPC, Paris) |
| 11:15 a.m. – 11:30 a.m. | T20. Cytoplasmic fate of sense-antisense mRNA pairs | Albertas Navickas (IBPC, Paris) |
| 11:30 a.m. – 11:45 a.m. | T21. Regulation and genetic interactions of the RNA decay machinery in *Staphylococcus aureus* | Peter Redder (University of Geneva) |

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| 11:45 a.m. - 12:00 p.m. | T22. Drosophila Nanos acts as a molecular clamp that modulates the RNA-binding and repression activities of Pumilio | Aaron Goldstrohm (Univeristy of Michigan) |
| 12:00 p.m. – 1:00 p.m. | LUNCH and **Meet the Speakers** | |
| 2:00 p.m. – 5:00 p.m. | Free time – Bus trip to Sintra/Cascais (49 places) | |
| 6:00 p.m. – 7:00 p.m. | Conference Registration | |
| 6:00 p.m. – 7:00 p.m. | DINNER | |
| 7:00 p.m. – 9:30 p.m. | ***Session 4: Quality Control and NMD*** ***Chair Kristian Baker*** | |
| 7:00 p.m. – 7:30 p.m. | T23. Mechanistic insight into the binding and targeting of aberrant RNA by the nonsense-mediated mRNA decay pathway | Kristian Baker (Case Western Reserve University) |
| 7:30 p.m. – 8:00 p.m. | T24. High resolution definition of the subsets of mRNAs targeted by the UPF proteins and other decapping activators | Allan Jacobson (U. Massachusetts) |
| 8:00 p.m. – 8:15 p.m. | T25. Ubiquitylation of ribosomal proteins play crucial roles in quality controls induced by aberrant translation | Tushifumi Inada (Tohoku University) |
| 8:15 p.m. – 8:30 p.m. | T26. ATP hydrolysis by UPF1 promotes translation termination at premature stop codons | Lucas Serdar (Case Western Reserve University) |
| 8:30 p.m. – 9:00 p.m. | T27. Role of the ribosome in initiating no-go decay | Hani Zaher (Washington U. St. Louis) |
| 9:00 p.m. – 9:30 p.m. | T28. What makes an NMD target? Characterisation of NMD sensitive mRNAs in human cells | Oliver Mühlemann (Universität Bern) |

Wednesday, July 13, 2016

| **Time** | **Title/Topic Event** | |
|---|---|---|
| 7:30 a.m. – 9:00 a.m. | BREAKFAST | |
| 7:30 a.m. – 12:00 p.m. | Conference Registration | |
| 9:00 a.m. – 12:00 p.m. | ***Session 5: miRNA/sRNA/CRISPR 1*** ***Chair Eric Massé*** | |
| 9:00 a.m – 9:30 a.m | T29. NetRNA sponsored lecture: RNA-dependent regulatory circuits in *Staphylococcus aureus* link metabolism, stress responses and virulence determinant expression in a dynamic manner | Pascale Romby (Université de Strasbourg) |
| 9:30 a.m – 9:45 a.m. | T30. RoxS small RNA stabilizes *yflS* mRNA by blocking RNase J1 5'-3' activity in *Bacillus subtilis* | Sylvain Durand (IBPC, Paris) |
| 9:45 a.m – 10:00 a.m. | T31. RNA Arrays: A novel opportunity for RNA research | Louise Butt (University of Portsmouth) |
| 10:00 a.m. – 10:15 a.m. | *Morning Coffee Break* | |
| 10:15 a.m. - 10:45 a.m. | T32. Processing of mRNA 3´ ends to give sRNAs | Gisela Storz (NIH) |
| 10:45 a.m. - 11:15 a.m. | T33. Diverse biology of tRNA-derived small non-coding RNAs | Paul Anderson (Harvard University) |
| 11:15 a.m. - 11:30 a.m. | T34. The importance of mRNA folding in controlling type I toxin antitoxin expression in Helicobacter pylori | Fabien Darfeuille (Université de Bordeaux) |
| 11:30 a.m. – 11:45 a.m. | T35. mRNP reorganization during microRNA-mediated repression | Oliva Rissland (University of Toronto) |
| 11:45 a.m. - 12:00 p.m. | T36. The Sm-like protein Hfq is important for ribosome biogenesis and affects translational fidelity | José Andrade (Universidade Nova de Lisboa) |
| 12:00 p.m. – 1:00 p.m. | LUNCH and **Meet the Speakers** | |
| 1:00 p.m. – 6:00 p.m. | Free time | |
| 6:00 p.m. – 7:00 p.m. | Conference Registration | |
| 6:00 p.m. – 7:00 p.m. | DINNER | |
| 7:00 p.m. – 9:30 p.m. | ***Session 6: miRNA/sRNA/CRISPR 2*** ***Chair Erik Sontheimer*** | |

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| 7:00 p.m. – 7:30 p.m. | T37. The RNA chaperone Hfq directly binds target mRNAs to promote sRNA-mediated cleavage | Eric Massé (University of Sherbrooke) |
| 7:30 p.m. – 8:00 p.m. | T38. Transport of ribosomal RNA biogenesis lncRNA RMRP to mitochondria by RBPs | Myriam Gorospe (NIH) |
| 8:00 p.m. – 8:15 p.m. | T39. Role of the RNA chaperone Hfq in the regulatory network governing the *Legionella pneumophila* differentiation | Giulia Oliva (Pasteur Institute, Paris) |
| 8:15 p.m. – 8:30 p.m. | T40. RNA surveillance as a mechanism to regulate maturation of both coding and non-coding RNAs | Anita Corbett (Emory University School of Medicine) |
| 8:30 p.m. – 9:00 p.m. | T41. The dynamic machinery of RNA degradation, processing and riboregulation in *E. coli* | Ben Luisi (University of Cambridge) |
| 9:00 p.m. – 9:30 p.m. | T42. *Neisseria meningitidis* Cas9 is a naturally high-fidelity genome editing enzyme | Erik Sontheimer (U. Massachusetts) |

Thursday, July 14, 2016

| **Time a.m.** | **Title/Topic Event** | |
|---|---|---|
| 7:30 a.m. – 9:00 a.m. | BREAKFAST | |
| 7:30 a.m. – 12:00 p.m. | Conference Registration | |
| 9:00 a.m. – 12:00 p.m. | ***Session 7: RNA binding proteins*** ***Chair Myriam Gorospe*** | |
| 9:00 a.m - 9:30 a.m | T43. mRNA-protein regulatory networks: RNA tagging, subnetworks and evolution | Marv Wickens (University of Madison) |
| 9:00 a.m - 9:45 a.m | T44. CshA is necessary for efficient degradation of a subset of mRNAs in the opportunistic pathogen Staphylococcus aureus | Patrick Linder (University of Geneva) |
| 9:45 a.m - 10:00 a.m | T45. Regulation of mRNA levels by the exosome specificity factor Mmi1 | Cornelia Kilchert (University of Oxford) |
| 10:00 a.m. – 10:15 a.m. | *Morning Coffee Break* | |
| 10:15 a.m. - 10:45 a.m. | T46. A CAF40-binding motif mediates recruitment of the CCR4-NOT complex by *Drosophila* Roquin | Elisa Izaurralde (Max Plank Institute for Developmental Biology) |
| 10:45 a.m. - 11:15 a.m. | T47. The antagonistic gene paralogs Upf3a and Upf3b govern nonsense-mediated RNA decay | Miles Wilkinson (UC San Diego) |
| 11:15 a.m. - 11:30 a.m. | T48. Alternative operon isoforms drive differential protein production in bacteria | Gene-Wei Li (Massachusetts Institute of Technology) |
| 11:30 a.m. – 12:00 p.m. | T49. A role for the unconventional deadenylase Toe1/Caf1z in RNA processing and neurodegeneration | Jens Lykke-Andersen (UC San Diego) |
| 12:00 p.m. – 12:30 p.m. | Business Meeting | |
| 12:30 p.m. – 1:30 p.m. | LUNCH and **Meet the Speakers** | |
| 1:30 p.m. – 4:00 p.m. | Free time | |
| 4:00 p.m. - 6:00 p.m. | ***Session 8 RNA decay and disease*** ***Chair Jeff Kieft*** | |
| 4:00 p.m. – 4:30 p.m. | T50. Targeting of the cellular exoribonuclease XRN1 - a shared RNA virus strategy with pathogenic implications | Jeff Wilusz (Colorado State University) |
| 4:30 p.m. – 4:45 p.m. | T51. A novel endonuclease escape element restricts viral but not mammalian ribonucleases | Britt Glaunsinger (UC Berkeley) |
| 4:45 p.m. – 5:00 p.m. | T52. The RNA exosome regulates differentiation of human embryonic stem cells | Cedric Belair (Yale University) |
| 5:00 p.m. – 5:30 p.m. | T53. Modulation of tristetraprolin (TTP) action in vivo though modifications of the endogenous genetic locus in mice | Perry Blackshear (NIH) |

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| 5:30 p.m. – 6:00 p.m. | T54. Zika, Dengue & West Nile: RNA structure and the art of molecular warfare | Jeff Kieft<br>(University of Colorado) |
| 6:00 p.m. – 7:00 p.m. | DINNER | |
| 7:00 p.m. – 9:30 p.m. | ***Session 9: Ribonucleases***<br>***Chair Lori Passmore*** | |
| 7:00 p.m. – 7:30 p.m. | T55. Does 5' UTR capture independent of cleavage and 5' monophosphorylated-end sensing represent a major mechanism by which RNase E initiates the turnover of RNA in *Escherichia coli*? | Kenny MacDowall<br>(University of Leeds) |
| 7:30 p.m. – 8:00 p.m. | T56. mRNA decay initiating ribonucleases in bacteria: convergent evolution of enzymes and pathways | Harald Putzer<br>(IBPC, Paris) |
| 8:00 p.m. – 8:30 p.m. | T57. Functions of the RNA exosome | Ambro Van Hoof<br>(University of Texas) |
| 8:30 p.m. – 9:00 p.m. | T58. Anchoring the RNA degradosome to the inner cytoplasmic membrane is necessary for normal biogenesis of the 50S ribosomal subunit | AJ Carpousis<br>(University of Toulouse) |
| 9:00 p.m. – 9:30 p.m. | T59. EMBO Young Investigator Lecture: Regulation of polyA tail length by cellular machines | Lori Passmore<br>(University of Cambridge) |

Friday, July 15, 2016

| **Time** | **Title/Topic Event** | |
|---|---|---|
| 7:30 a.m. – 9:00 a.m. | BREAKFAST | |
| 9:00 a.m. | Boxed Snacks to Go<br>And DEPARTURES | |

**END OF CONFERENCE**

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